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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,319	06/28/2000	Krishna Seshan	042390.P8490	5476

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Michael A Bernadicou  
Blakely Sokoloff Taylor & Zafman LLP  
12400 Wilshire Boulevard Seventh Floor  
Los Angeles, CA 90025-1026

EXAMINER

WEISS, HOWARD

ART UNIT PAPER NUMBER

2814

DATE MAILED: 09/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/606,319

Applicant(s)

SESHAN, KRISHNA

Examiner

Howard Weiss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) 16-25 ~~is~~ are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 26-28 ~~is~~ are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-28 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Attorney's Docket Number: 042390.P8490

Filing Date: 6/28/00

Continuing Data: none

Claimed Foreign Priority Date: none

Applicant(s): Seshan

Examiner: Howard Weiss

***Election/Restrictions***

1. The Applicant's election of Group I, Claims 1 to 15 and 26 to 28, in Paper No. 5, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 16 to 25 are withdrawn from consideration as being for a non-elected invention. The Applicant is requested to cancel the non-elected claims as part of a complete response to this office action. Cancellation of the non-elected claims would not preclude the later filing of a divisional application on the non-elected invention (please see 35 USC 120 and 121).

***Drawings***

3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
4. Figures 1(a) and 1(b) should be individually designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2 to 5, 14 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Regarding Claims 2 and 4, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).
9. Claim 3 is indefinite because it is an attempt to claim the invention by excluding what the Applicants did not invent rather than distinctly and particularly pointing out what they did invent. *In re Schechter*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953). See MPEP § 2173.05(i).
10. The Markush groupings in Claims 2, 4 and 5 should be put in the proper phrasing, "...selected from the group consisting of..." See MPEP §2173.05(h).
11. Claim 14 is indefinite because it is unclear if the "bond pads" described are those stated in Claim 1 or a new set.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1 to 4, 6, 7, 11, 12, 14, 15 and 26 to 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (U.S. Patent No. 5,854,513).

Kim shows all aspects of the instant invention (e.g. Figures 3 to 6) including:

- a bond pad of two segments **22,23** with two lines **27**, **probe** electrically connected to said pad segments
- vias (openings in insulation layer **24**) offset from the center of a bump **41** and electrically connected to said pad segments
- said bump comprises solder or a non-lead containing conductor (Column 4 Lines 31 to 37)
- BLM **25** disposed over said bond pads segments and having segments (BLM in the vias and outside said vias) and comprising lower and upper layers of the claimed materials (Column 4 Lines 12 to 25)

In reference to the claim language pertaining to the BLM providing a diffusion barrier to metals, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); see MPEP § 2112. Since Kim shows all the features of the claimed invention, the ability of the BLM to act as a metal diffusion barrier is an inherent property of Kim's invention.

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time

the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 5, 8 to 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and Takada et al. (Kokai 05-013418).

Kim shows most aspects of the instant invention (Paragraph 13) except for the bump comprising ECA or polymer, the lower and upper layers of the stated thicknesses and the BLM segments and vias in a polygonal layout. Takada et al. teach (e.g. Figure 6(a)) to layout vias and BLM segments in a polygonal layer to prevent generation of cracks (see PURPOSE). Additionally, ECA or polymers are known equivalents in the art for bumps and are therefore obvious for one of ordinary skill to use in place of the metal bumps.

Since the Applicant has not established the criticality of the thicknesses stated and since these thicknesses are in common use in similar devices in the art, it would have been obvious to one of ordinary skill in the art to use these values in the device of Kim and Takada et al. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

### **Conclusion**

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kung et al. (U.S. Patent No. 6,179,200) teach the use of BLM layers and Otaguro et al. (kokai 05-166814) teach the use of segmented bond pads.
17. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November

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1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318**, and After-Final, **(703) 872-9319**, Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(703) 308-4840** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.

19. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/737, 774, 781	9/20/02
Other Documentation: none	
Electronic Database(s): EAST, IEL	9/20/02

HW/hw  
23 September 2002

  
Howard Weiss  
Examiner  
Art Unit 2814